WHAT IS CLAIMED IS:

1. A method for adaptively filtering a signal, comprising the steps of:

receiving a signal;

processing the signal to produce a first processed signal, the first processed signal including a desired portion and an adjacent portion;

removing a direct current (DC) offset of the first processed signal to produce a second processed signal;

determining filter coefficients based on relative signal strengths of the desired portion and the adjacent portion; and

low pass filtering the second processed signal utilizing the filter coefficients to produce a third processed signal.

2. The method according to Claim 1, wherein said step of processing the signal to produce a first processed signal comprises the steps of:

splitting the signal into an in-phase (I) channel component and a quadrature-phase (Q) channel component;

low pass filtering each of the I channel component and the Q channel component; and

decimating each of the I channel component and the Q channel component.

3. The method according to Claim 1, wherein said step of removing a direct current (DC) offset of the first processed signal to produce a second processed signal comprises the steps of:

storing the first processed signal to produce a stored first processed signal;

determining a DC level value of the first processed signal; and

subtracting the DC level value from the stored first processed signal to produce the second processed signal.

4. The method according to Claim 1, further comprising the steps of:

decimating the third processed signal to produce a fourth processed signal; and

forwarding the fourth processed signal for further processing.

5. The method according to Claim 1, wherein said step of determining filter coefficients based on relative signal strengths of the desired portion and the adjacent portion comprises the steps of:

high pass filtering the first processed signal to substantially extract the adjacent portion;

calculating the power of the adjacent portion;

calculating the power of the first processed signal;

determining a power ratio responsive to the power of the adjacent portion and the power of the first processed signal;

determining a bandwidth for an adjacent channel filter based on the power ratio; and

determining filter coefficients for the adjacent channel filter responsive to the bandwidth of the adjacent channel filter.

6. The method according to Claim 1, wherein said step of determining is performed at least once per burst in a time division multiple access (TDMA) scheme.

7. A method for adaptively filtering a signal, comprising the steps of:

receiving a signal, the signal including a desired portion and an adjacent portion;

high pass filtering the signal to produce an adjacent channel signal;

calculating the power of the adjacent channel signal;

calculating the power of the signal;

determining a power ratio responsive to the power of the adjacent channel signal and the power of the signal;

determining a bandwidth for a channel filter based on the power ratio; and

low pass filtering the signal or a derivative of the signal using the channel filter configured responsive to the bandwidth.

8. The method according to Claim 7, wherein said steps of calculating the power of the adjacent channel signal and calculating the power of the signal are accomplished by estimating an amplitude of the adjacent channel signal and the signal, respectively, according to the following formula:

$$Amp = Max\,(I,Q) + 0.5 * Min(I,Q),$$

where "I" represents an in-phase (I) component and "Q" represents a quadrature-phase (Q) component for each amplitude for each of the adjacent channel signal and the signal, respectively.

9. The method according to Claim 7, wherein said step of determining a power ratio responsive to the power of the adjacent channel signal and the power of the signal is accomplished according to the following formula:

$$power\ ratio = \frac{power\ of\ the\ signal - power\ of\ the\ adjacent\ channel\ signal}{power\ of\ the\ adjacent\ channel\ signal}.$$

10. The method according to Claim 7, wherein said step of determining a bandwidth for a channel filter based on the power ratio comprises the steps of:

comparing the power ratio to a list of power ratios;

selecting a selected power ratio from the list of power ratios that is closest to the power ratio; and

determining the bandwidth that corresponds to the selected power ratio in the list of power ratios.

11. The method according to Claim 7, wherein said step of low pass filtering the signal or a derivative of the signal using the channel filter configured responsive to the bandwidth comprises the steps of:

ascertaining a set of filter coefficients that provide a filtering bandwidth substantially equivalent to the bandwidth; and

applying the set of filter coefficients to a low pass filter.

12. The method according to Claim 7, wherein the method is performed at least once per burst in a time division multiple access (TDMA) scheme.

13. An apparatus for adaptively filtering a signal, comprising:

at least one analog-to-digital (A/D) converter, said at least one A/D converter receiving an analog signal and outputting a digital signal, the digital signal including a desired portion and an adjacent portion;

a direct current (DC) offset part, said DC offset part adapted for receiving the digital signal or a derivative thereof and compensating for a DC offset to produce a compensated signal;

a filter coefficient determiner, said filter coefficient determiner adapted for receiving the digital signal or the derivative thereof and producing as output a filter control signal based on relative signal strengths of the desired portion and the adjacent portion; and

at least one filter, said at least one filter receiving the filter control signal and being controlled thereby, said at least one filter adapted for filtering the compensated signal and producing a filtered output signal responsive to the filter control signal.

14. The apparatus according to Claim 13, further comprising:

at least one low pass filter, said at least one low pass filter receiving the digital signal and filtering the digital signal to filter out higher frequencies and to produce a first derivative digital signal; and

at least one decimator, said at least one decimator receiving the first derivative digital signal and decimating the first derivative digital signal to reduce the number of digital samples and produce a second derivative digital signal.

15. The apparatus according to Claim 14, wherein the second derivative digital signal comprises the derivative of the digital signal that is received by said DC offset part and said filter coefficient determiner.

16. The apparatus according to Claim 14, wherein the second derivative digital signal is further low-pass filtered and decimated before comprising the derivative of the digital signal that is received by said DC offset part and said filter coefficient determiner.

17. The apparatus according to Claim 13, wherein said DC offset part comprises:

a DC-level determiner, the DC-level determiner adapted for receiving the digital signal or the derivative thereof as input and for producing as output a DC-level value associated with the digital signal or the derivative thereof, respectively;

a memory, the memory adapted for receiving and storing the digital signal or the derivative thereof; and

at least one subtractor, the at least one subtractor adapted for determining the difference between the digital signal or the derivative thereof and the DC-level value.

18. The apparatus according to Claim 13, further comprising:

at least one decimator, said at least one decimator adapted for receiving the filtered output signal and decimating the filtered output signal to reduce the number of digital samples and produce a desired signal that is forwarded for further processing.

19. The apparatus according to Claim 13, wherein said filter coefficient determiner comprises:

at least one high pass filter, said at least one high pass filter adapted for receiving the digital signal or the derivative thereof and high pass filtering the signal to produce an adjacent channel signal;

a first power calculator, said first power calculator adapted for receiving the adjacent channel signal and calculating the power of the adjacent channel signal;

a second power calculator, said second power calculator adapted for receiving the digital signal or the derivative thereof and calculating the power of the signal; and

a filter coefficient selector, said filter coefficient selector determining a power ratio responsive to the power of the adjacent channel signal and the power of the signal, said filter coefficient selector adapted for determining a bandwidth for a channel filter based on the power ratio and for ascertaining a plurality of filter coefficients based on the bandwidth, the filter control signal comprising the plurality of filter coefficients.

20. The apparatus according to Claim 13, wherein the apparatus comprises a homodyne-based receiver.

21. The apparatus according to Claim 13, wherein the apparatus comprises a mobile terminal operating substantially in accordance with the Global System for Mobile Communications ++ (GSM++) standard.

22. The apparatus according to Claim 13, wherein the apparatus comprises a base station operating substantially in accordance with the Global System for Mobile Communications ++ (GSM++) standard.

23. The apparatus according to Claim 13, wherein the filter control signal comprises a plurality of filter coefficients.

24. The apparatus according to Claim 13, wherein said at least one A/D converter, said DC offset part, said filter coefficient determiner, and said at least one filter are comprised, at least partially, of software.

25. An arrangement for adaptively filtering a signal, comprising:

at least one high pass filter, said at least one high pass filter adapted for receiving a signal and high pass filtering the signal to produce an adjacent channel signal, the signal including a desired portion and an adjacent portion;

a first power calculator, said first power calculator adapted for receiving the adjacent channel signal and calculating the power of the adjacent channel signal;

a second power calculator, said second power calculator adapted for receiving the signal and calculating the power of the signal; and

a filter coefficient selector, said filter coefficient selector determining a power ratio responsive to the power of the adjacent channel signal and the power of the signal, said filter coefficient selector adapted for determining a bandwidth for a channel filter based on the power ratio and for ascertaining a plurality of filter coefficients based on the bandwidth.

26. The arrangement according to Claim 25, wherein said first power calculator and said second power calculator perform their respective calculations by estimating the amplitude of the adjacent channel signal and the signal, respectively, according to the following formula:

$$Amp = Max\,(I,Q) + 0.5 * Min(I,Q),$$

where "I" represents an in-phase (I) component and "Q" represents a quadrature-phase (Q) component for each amplitude for each of the adjacent channel signal and the signal, respectively.

27. The arrangement according to Claim 25, wherein said filter coefficient selector determines a power ratio responsive to the following formula:

$$power\ ratio = \frac{power\ of\ the\ signal - power\ of\ the\ adjacent\ channel\ signal}{power\ of\ the\ adjacent\ channel\ signal}.$$

28. The arrangement according to Claim 25, further comprising:

a memory, said memory storing a plurality of power ratio values in a look up table, each power ratio value of said plurality of power ratio values associated in said memory with a corresponding bandwidth; and

wherein said filter coefficient selector is further adapted for accessing said memory to determine a selected power ratio that is closest to the power ratio and for retrieving the corresponding bandwidth that is associated with the selected power ratio.

29. The arrangement according to Claim 25, further comprising:

a memory, said memory storing a plurality bandwidths, each bandwidth of said plurality of bandwidths associated in said memory with a corresponding set of filter coefficients; and

wherein said filter coefficient selector is further adapted for accessing said memory to determine a selected bandwidth that is closest to the bandwidth and for retrieving the corresponding set of filter coefficients that is associated with the selected bandwidth.

30. The arrangement according to Claim 25, further comprising:

an adjacent channel filter, said adjacent channel filter adapted for filtering responsive to received filter coefficients; and

wherein said filter coefficient selector is further adapted for providing said plurality of filter coefficients to said adjacent channel filter.

31. The arrangement according to Claim 25, wherein the arrangement comprises at least part of a homodyne-based receiver.

32. The arrangement according to Claim 25, wherein said at least one high pass filter, said first power calculator, said second power calculator, and said filter coefficient selector are comprised, at least partially, of software.

33. The arrangement according to Claim 25, wherein the arrangement comprises at least part of a mobile terminal.

34. The arrangement according to Claim 25, wherein the arrangement comprises at least part of a base station.

35. A receiver for adaptively filtering a signal, comprising:

means for receiving a signal;

means for processing the signal to produce a first processed signal, the first processed signal including a desired portion and an adjacent portion;

means for removing a direct current (DC) offset of the first processed signal to produce a second processed signal;

means for determining filter coefficients based on relative signal strengths of the desired portion and the adjacent portion; and

means for low pass filtering the second processed signal utilizing the filter coefficients to produce a third processed signal.

36. An arrangement for adaptively filtering a signal, comprising:

means for receiving a signal, the signal including a desired portion and an adjacent portion;

means for filtering the signal to produce an adjacent channel signal;

means for calculating the power of the adjacent channel signal and for calculating the power of the signal;

means for determining a power ratio responsive to the power of the adjacent channel signal and the power of the signal;

means for determining a bandwidth for a channel filter based on the determined power ratio;

means for configuring the channel filter responsive to the determined bandwidth; and

means for channel filtering the signal or a derivative of the signal using the configured channel filter.

37. An apparatus for rejecting an adjacent channel, comprising:

an adjacent channel filter, said adjacent channel filter receiving a control signal input, said adjacent channel filter configured to reject an adjacent channel and to pass a desired channel responsive to the control signal input; and

a control signal determiner, said control signal determiner receiving a signal that includes the adjacent channel and the desired channel, said control signal determiner configured to process the signal and to produce the control signal input, the control signal input based on relative power levels of the adjacent channel and the desired channel.